

REMARKS

This is a full and timely response to the outstanding final Office Action mailed July 10, 2003 (Paper No. 8). Upon entry of this response, claims 1-21 and 40-42 remain under consideration and claims 23-39 have been withdrawn. Claims 1, 12 and 21 have been amended, and claims 40-42 have been added. Applicant asserts that the amendments add no new subject matter to the present application. Applicant respectfully requests that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

1. Rejection of Claims 1-22 under 35 U.S.C. §103

Claims 1-22 have been rejected under §103(a) as allegedly obvious over *Neal* (U.S. 6,324,534) in view of *Yamazaki et al.* (U.S. 6,204,939) and further in view of *Megiddo et al.* (U.S. 6,182,070). Applicant respectfully traverses these rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. Claim 1

Applicant respectfully submits that claim 1, as amended, is allowable for at least the reason that the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* does not disclose, teach, or suggest at least the feature of “calculating an *efficiency measure* for each search rule using the collected values, where the efficiency measure measures *how efficient a corresponding search rule is in finding a possible or real match* with the target record” as recited in amended claim 1.

Yamazaki et al. teaches a rule base processing system that stores knowledge as rules in a rule base and uses the knowledge to solve a problem, such as mapping the logical description of an electronic circuit to a combination of physical components. This system applies the rules to the input data (logical circuit description) to produce output data (physical components implementing the circuit).

Each rule contains a procedure selecting section 12 and procedure evaluating section 13. The evaluating section 13 evaluates each case in a set of plural cases to produce a numeric evaluation value, and the selecting section 12 uses this evaluation value to select the case with either the maximum or minimum value. Once a case is selected, the procedure associated with the case is executed. (Col. 4, lines 58-68; Col. 7, lines 49-67).

In contrast, the present invention as claimed in claim 1 involves search rules that are configured to identify a target record in the database. The search rules are executed to retrieve the target record, and possible matches are retrieved. Statistical values related to the execution of each search rule are collected. An efficiency measure is calculated that measures how efficient a corresponding search rule is in finding match with the target record.

The evaluation values in *Yamazaki et al.* (Col. 4, lines 58-68) do not measure “how efficient a corresponding search rule is in finding match with the target record” because claim 1 requires the target record to be “*in the database.*” The Office Action alleged that “all the rules are stored in a rule base and the solution that results from the execution of the rules is stored in the rule base in a knowledge source; in another word, the solution itself is a record in the rule base, and thus the target record.” (Office Action, page 7, paragraph 4). Applicant respectfully disagrees.

The solution identified by the system in *Yamazaki et al.* cannot be “in the database” as the Office Action alleges and as is recited in amended claim 1, because each solution is specific to input data. That is, given a certain input (e.g. logical circuit description) and a certain rule base, the system in *Yamazaki et al.* will produce a certain output (e.g. corresponding circuit consisting of physical components). This output cannot be in the database, since the output depends on both the rules and the input data that is specific to the problem to be solved.

Furthermore, the numeric evaluation values disclosed by *Yamazaki et al.* do not measure “*how efficient* a corresponding search rule is *in finding a match*” as recited in claim 1. Rather, the evaluation values in *Yamazaki et al.* measure how desirable a particular solution is. For example, application of the first rule results in a circuit with X components, and the second rule results in Y components, where $X > Y$, so the second rule produces the circuit with the smallest number of components. This measure of the solution is not a measure of how good the rule is in finding a match.

Finally, neither *Neal* nor *Megiddo et al.* teaches “collected values” or “an efficiency measure” as recited in amended claim 1. Thus, a *prima facie* case establishing an obviousness rejection has not been made and claim 1 is not obvious under the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* Therefore, the rejection should be withdrawn.

b. Claim 2

Applicant respectfully submits that claim 2 is allowable for at least the reason that the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* does not disclose, teach, or suggest at least the feature of “one of the collected statistical values corresponds to a number of instances that a search rule is executed to search for the target record” as recited in claim 2.

The Office Action, (p. 5, paragraph 2), alleges that *Megiddo et al.* discloses the above element in Col. 9, line 60 to Col. 10, line 62. Applicant respectfully disagrees. The cited passage in *Megiddo et al.* appear to disclose a method for determining the statistical significance of an association rule, which includes the steps of: generating a synthetic database from the original database using random seeds (Col. 10, line 17-21); discovering association rules in the synthetic databases (Co. 10, lines 53-54); computing a p-value for the rules in the synthetic datasets (Col. 10, lines 54-56); and ranking the p-values (Col. 10, lines 56-59).

The passage appears to disclose the following “values”: p-values p_i (Col. 10, line 20-30); the mean of p-values V_i (Col. 10, line 35-40); and threshold t (Col. 10, line 45-50). However, none of these “values” corresponds to a “number of instances that a search rule is executed to search for the target record” as recited in claim 2.

Furthermore, Applicant can find no disclosure of the above element anywhere in *Megiddo et al.* The Examiner is therefore respectfully requested to point out with particularity the portion of *Megiddo et al.* that teaches “number of instances that a search rule is executed to search for the target record.”

c. Claim 3

Applicant respectfully submits that claim 3 is allowable for at least the reason that the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* does not disclose, teach, or suggest at least the feature of “one of the collected statistical values corresponds to a number of instances that a search rule retrieves one or more records as possible matches to the target record” as recited in claim 3.

As stated above in connection with claim 3, none of the “values” disclosed in the passage in *Megiddo et al.* cited by the Office Action (p-values p_i ; the mean of p-values V_i ; and threshold

t) corresponds to a “number of instances that a search rule retrieves one or more records as possible matches to the target record” as recited in claim 3.

Furthermore, Applicant can find no disclosure of the above element anywhere in *Megiddo et al.* The Examiner is therefore respectfully requested to point out with particularity the portion of *Megiddo et al.* that teaches “number of instances that a search rule retrieves one or more records as possible matches to the target record.”

d. Claims 4-11

Because claim 1 is believed to be allowable over the cited art of record, Applicant respectfully submits that claims 4-11 (which depend from independent claim 1) are allowable as a matter of law for at least the reason that the dependent claims 4-11 contain all elements of independent claim 1. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection to claims 4-11 be withdrawn.

e. Claim 12

Applicant respectfully submits that claim 12, as amended, is allowable for at least the reason that the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* does not disclose, teach, or suggest at least the feature of “calculating an *efficiency measure* for each search rule using the collected values, where the efficiency measure measures *how efficient a corresponding search rule is in finding a possible or real match* with the target record” as recited in claim 12.

Yamazaki et al. teaches a rule base processing system that stores knowledge as rules in a rule base and uses the knowledge to solve a problem, such as mapping the logical description of an electronic circuit to a combination of physical components. This system applies the rules to the input data (logical circuit description) to produce output data (physical components implementing the circuit).

Each rule contains a procedure selecting section 12 and procedure evaluating section 13. The evaluating section 13 evaluates each case in a set of plural cases to produce a numeric evaluation value, and the selecting section 12 uses this evaluation value to select the case with either the maximum or minimum value. Once a case is selected, the procedure associated with the case is executed. (Col. 4, lines 58-68; Col. 7, lines 49-67).

In contrast, the present invention as claimed in claim 1 involves search rules that are configured to identify a target record in the database. The search rules are executed to retrieve the target record, and possible matches are retrieved. Statistical values related to the execution of each search rule are collected. An efficiency measure is calculated that measures how efficient a corresponding search rule is in finding match with the target record.

The evaluation values in *Yamazaki et al.* (Col. 4, lines 58-68) do not measure “how efficient a corresponding search rule is in finding match with the target record” because claim 12 requires the target record to be “*in the database.*” The Office Action alleged that “all the rules are stored in a rule base and the solution that results from the execution of the rules is stored in the rule base in a knowledge source; in another word, the solution itself is a record in the rule base, and thus the target record.” (Office Action, page 7, paragraph 4). Applicant respectfully disagrees.

The solution identified by the system in *Yamazaki et al.* cannot be “in the database” as the Office Action alleges and as is recited in amended claim 12, because each solution is specific to input data. That is, given a certain input (*e.g.* logical circuit description) and a certain rule base, the system in *Yamazaki et al.* will produce a certain output (*e.g.* corresponding circuit consisting of physical components). This output cannot be in the database, since the output depends on both the rules and the input data that is specific to the problem to be solved.

Furthermore, the numeric evaluation values disclosed by *Yamazaki et al.* do not measure “*how efficient* a corresponding search rule is *in finding a match*” as recited in claim 12. Rather, the evaluation values in *Yamazaki et al.* measure how desirable a particular solution is. For example, application of the first rule results in a circuit with X components, and the second rule results in Y components, where $X > Y$, so the second rule produces the circuit with the smallest number of components. This measure of the solution is not a measure of how good the rule is in finding a match.

Finally, neither *Neal* nor *Megiddo et al.* teaches “collected values” or “an efficiency measure” as recited in amended claim 12. Thus, a *prima facie* case establishing an obviousness rejection has not been made and claim 12 is not obvious under the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* Therefore, the rejection should be withdrawn.

Thus, a *prima facie* case establishing an obviousness rejection has not been made and claim 12 is not obvious under the proposed combination of *Neal* in view of *Yamazaki et al.* and further in view of *Megiddo et al.* Therefore, the rejection should be withdrawn.

f. Claims 13-21

Because claim 12 is believed to be allowable over the cited art of record, Applicant respectfully submits that claims 13-21 (which depend from independent claim 12) are allowable as a matter of law for at least the reason that the dependent claims 13-21 contain all elements of independent claim 12. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection to claims 13-21 be withdrawn.

2. Newly Added Claims

New claims 40-42 are based on subject matter that is explicit and/or inherent within the description of the specification and/or the drawings. Applicant submits that no new matter has been added in new claims 40-42, and that these new claims are allowable over the cited prior art. Therefore, Applicant requests the Examiner to enter and allow the above new claims.

CONCLUSION

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-21 and 40-42 be allowed to issue. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted,

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